

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

1. – 22. (Cancelled)

23. (Currently Amended) A relay apparatus for delivering live video stream data from a server having an image sensing device to clients via a network, comprising:

a connection management device ~~adapted~~ configured to make a connection with the server having the image sensing device via the network in case that the connection has not been established with the server when a request is received from a client, ~~not to make another connection with the server in case that the connection has been established with the server when the request is received from the client~~ and to get the live video stream data from the server having the image sensing device;

a memory control device ~~adapted~~ configured to store the live video stream data including sequence information based on a time when the live video stream data is acquired by the image sensing device, from the server having the image sensing device, in a buffer memory; and

a first determining device configured to determine whether a second request from a second client is received within a predetermined period after a first request from a first client which is receiving the live video stream data has been received;

a second determining device configured to determine whether the buffer memory stores new live video stream data acquired after the live video stream data has been sent to the second client, based on the sequence information in the second request and the sequence information in

the buffer memory, in case that the first determining device determines that the second request is not received within the predetermined period after the first request has been received; and

a delivery device configured to deliver to the first and second clients the live video stream data which is received from the server having the image sensing device in accordance with the first request in case that the first determining device determines that the second request is received within the predetermined period after the first request has been received,

to deliver to the second client the new live video stream data stored in the buffer memory and the live video stream data which is received from the server having the image sensing device after receiving the second request in case that the second determining device determines that the new live video stream data acquired after the live video stream data has been sent to the second client is stored in the buffer memory, and

to deliver to the second client the live video stream data which is received from the server having the image sensing device after the second request is received and not to deliver the live video stream data which has been stored in the buffer memory before the second request is received in case that the second determining device determines that the new live video stream data acquired after the live video stream data has been sent to the second client is not stored in the buffer memory,

wherein the connection management device does not make a second connection with the server other than a first connection in case that the first connection has been established with the server when the request is received from the client.

~~a deliver device adapted to determine whether the deliver device receives a second request from a second client within a predetermined period after the deliver device receives a first request from a first client, to deliver the same video data of the live video stream data~~

~~stored in the buffer to the first and second clients in case that the deliver device receives the second request from the second client within the predetermined period, and~~

~~to deliver new video data of the live video stream data to the second client by requesting the server to send the new video data in case that the deliver device receives the second request from the second client after the predetermined period.~~

24. (Previously Presented) The apparatus according to claim 23, wherein a protocol between the relay apparatus and the clients is HTTP.

25. (Previously Presented) The apparatus according to claim 23, wherein the connection management device converts a first format of the video stream data to a second format for the clients.

26. (Cancelled)

27. (Previously Presented) The apparatus according to claim 23, wherein the predetermined period is a period between the point where the deliver device receives a request from one of the first and second clients and the point where the deliver device receives a next request from the other of the first and second clients.

28. (Currently Amended) The relaying method to deliver live video stream data from a server having an image sensing device to clients via the network, comprising the steps of:

making a connection between a relay apparatus and the server having the image sensing device via the network in case that the connection has not been established with the server when a request is received from a client, ~~and not to make another connection with the server in case that the connection has been established with the server when the request is received from the client,~~

getting the live video stream data including sequence information based on a time when the live video stream data is acquired by the image sensing device, from the server having the image sensing device and storing the live video stream data in a buffer memory,

first determining whether a second request from a second client is received within a predetermined period after a first request from a first client which is receiving the live video stream data has been received,

second determining whether the buffer memory stores new live video stream data acquired after the live video stream data has been sent to the second client, based on the sequence information in the second request and the sequence information in the buffer memory, in case that the first determining step determines that the second request is not received within the predetermined period after the first request has been received, and

delivering the same video data of the live video stream data stored in the buffer memory to the first client and the second client clients the live video stream data which is received from the server having the image sensing device in accordance with the first request via the network, in case that the first determining step determines that the second request from the second client is received within the predetermined period after the first request has been received,

delivering to the second client the live video stream data stored in the buffer memory and the live video stream data which is received from the server having the image sensing device after receiving the second request in case that the second determining step determines that the new live video stream data acquired after the live video stream data has been sent to the second client is stored in the buffer memory, and

delivering to the second client the live video stream data which is received from the server having the image sensing device after the second request is received and not to deliver

the live video stream data which has been stored in the buffer memory before the second request is received in case that the second determining step determines that the new live video stream data acquired after the live video stream data has been send to the second client is not stored in the buffer memory,

wherein the making step does not make a second connection with the server other than a first connection in case that the first connection has been established with the server when the request is received from the client.

~~requesting the server to send new video data of the live video stream data, in case that the second request from the second client is received after the predetermined period, and delivering the new video data of the live video stream to the second client.~~

29. (Previously Presented) The method according to claim 28, wherein a protocol between the relay apparatus and the clients is HTTP.

30. (Previously Presented) The method according to claim 28, wherein a first format of the video stream data is converted to a second format for the client.

31. (Cancelled)

32. (Previously Presented) The method according to claim 28, wherein the predetermined period is a period between the point where a request from one of the first and second clients is received in the relay apparatus and the point where a next request from the other of the first and second clients is received in the relay apparatus.

33. (Currently Amended) A storage medium to store computer program to execute a relaying method to deliver live video stream data from a server having an image sensing device to clients via a network, the computer program comprising the codes of:

making a connection between a relay apparatus and a the server having the image

sensing device via the network in case that the connection has not been established with the server when a request is received from a client, ~~and not to make another connection with the server in case that the connection has been established with the server when the request is received from the client,~~

getting the live video stream data including sequence information based on a time when the live video stream data is acquired by the image sensing device, from the server having the image sensing device and storing the live video stream data in a buffer memory,

first determining whether a second request from a second client is received within a predetermined period after a first request from a first client which is receiving the live video stream data has been received,

second determining whether the buffer memory stores new live video stream data acquired after the live video stream data has been sent to the second client, based on the sequence information in the second request and the sequence information in the buffer memory, in case that the first determining step determines that the second request is not received within the predetermined period after the first request has been received,

~~delivering the same video data of the live video stream data stored in the buffer memory to the first client and the second client~~ clients the live video stream data which is received from the server having the image sensing device in accordance with the first request via the network, in case that the first determining step determines that the second request from the second client is received within the predetermined period after the first request has been received,

delivering to the second client the live video stream data stored in the buffer memory and the live video stream data which is received from the server having the image sensing device after receiving the second request in case that the second determining step determines

that the new live video stream data acquired after the live video stream data has been sent to the second client is stored in the buffer memory, and

delivering to the second client the live video stream data which is received from the server having the image sensing device after the second request is received and not to deliver the live video stream data which has been stored in the buffer memory before the second request is received in case that the second determining step determines that the new live video stream data acquired after the live video stream data has been send to the second client is not stored in the buffer memory, wherein the making step does not make a second connection with the server other than a first connection in case that the first connection has been established with the server when the request is received from the client.

~~requesting the server to send new video data of the live video stream data, in case that the second request from the second client is received after the predetermined period, and delivering the new video data of the live video stream data to the second client.~~

34. (Previously Amended) The storage medium according to claim 33, wherein a protocol between the relay apparatus and the clients is HTTP.

35. (Previously Amended) The storage medium according to claim 33, wherein a first format of the video stream data is converted to a second format for the clients.

36. (Cancelled)

37. (Previously Amended) The storage medium according to claim 33, wherein the predetermined period is a period between the point where the deliver device receives a request from one of the first and second clients and the point where the deliver device receives a next request from the other of the first and second clients.